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C Shares of Upper Income Groups in Savings

Short term movements in the apportionment of income between expenditures and savings have long been recognized as influencing business cycles. We may now consider what the changes in upper income shares which we have just discussed imply for short term cyclical changes in savings.

1 *Setting of the Problem*

Does movement of income shares of upper groups counter to business cycles mean that their shares in total savings also move counter to business cycles?

The answer would presumably be affirmative as long as changes in the savings-income ratios (proportions of income that are saved) for the upper income groups, which presumably move with business cycles, do not have an amplitude wider than that of the savings-income ratios for the lower groups. For the share of any given income group in total savings is a fraction, of which the numerator is the product of its share in total income and the proportion of its income that is saved, and the denominator is the over-all savings-income ratio for the total population. For example, if the income share of the top 5 percent group is 30 percent and it saves a third of its income, its savings, as a share of the total income of all individuals, will be 10 percent (30 percent x 0.33). If the population as a whole saves 15 percent of its income, the top 5 percent group's share in total savings will be (30 x 0.33)/15, or two-thirds.

The particular question to be explored here is how the savings-income ratios at upper income levels vary over time. These ratios can be studied for either (a) given percentile groups, i.e., the top 1, 5, etc., percent of the population in each year; or (b) groups at a given relative income level, i.e., groups that in each year derive incomes x times the average income per capita (referred to below as income multiple position). Measures under (a) would be more directly relevant for the analysis here. But the several deficiencies in the sample data on expenditures and savings permit much greater comparability if we use measures under (b). For this reason, in trying to formulate the question to be explored here, we couch Table 17 largely in terms of savings-income ratios at income multiple positions.

We record in columns 1, 4, and 7, the percentage shares of total

Table 17: Savings of Upper Income Groups as Percentages of Total Income of Individuals Assuming Constancy of Savings-Income Ratios at Upper Income Levels, 1919-1945

	Top 1 Percent			*2nd & 3rd Percentage Band*			*4th & 5th Percentage Band*			*Top 5 Percent* Savings as % of Total Income Assuming Constancy of Savings-Income Ratio for Given		*Rank of Share (Increasing Order) of Top 5 Percent Group in Total Savings Assuming Constancy of Savings-Income Ratio for Given*	
	% share of total income, economic income variant (1)	Savings-income ratio (%) (2)	Savings as % of total income (1) x (2) (3)	% share of total income, economic income variant (4)	Savings-income ratio (%) (5)	Savings as % of total income (4) x (5) (6)	% share of total income, economic income variant (7)	Savings-income ratio (%) (8)	Savings as % of total income (7) x (8) (9)	Income multiple (10)	Percentage band (11)	Income multiple (12)	Percentage band (13)
1919	14.0	42.10	5.9	6.8	25.80	1.7	5.3	21.60	1.1	8.8	9.0	6	6
1920	13.6	41.86	5.7	6.8	25.80	1.8	5.3	21.60	1.1	8.6	8.9	10	10
1921	16.2	43.06	7.0	9.0	29.46	2.7	6.5	25.40	1.7	11.3	10.8	26	26
1922	15.6	42.84	6.7	8.0	28.00	2.2	6.8	25.80	1.7	10.7	10.4	20	20
1923	14.0	42.10	5.9	8.5	28.60	2.4	5.6	22.80	1.3	9.6	9.6	12	12
1924	14.7	42.48	6.2	8.4	28.60	2.4	6.0	24.00	1.4	10.1	9.9	19	19
1925	15.7	42.88	6.7	8.1	28.00	2.3	6.4	25.00	1.6	10.6	10.4	14	14
1926	15.8	42.92	6.8	8.2	28.30	2.3	6.3	24.60	1.5	10.6	10.4	18	18
1927	16.5	43.15	7.1	8.4	28.60	2.4	6.3	25.00	1.6	11.1	10.7	17	17
1928	17.2	43.34	7.4	8.3	28.30	2.3	6.6	25.40	1.7	11.5	11.1	21	21
1929	17.2	43.34	7.4	8.5	28.60	2.4	6.2	24.60	1.5	11.4	11.0	15	15
1930	15.6	42.84	6.7	8.4	28.60	2.4	6.7	25.40	1.7	10.8	10.5	23	23
1931	15.6	42.84	6.7	9.0	29.46	2.7	7.4	27.00	2.0	11.3	10.8	22	22
1932	15.3	42.72	6.5	9.3	30.01	2.8	7.5	27.35	2.1	11.4	10.8	24	24
1933	14.4	42.33	6.1	8.9	29.18	2.6	7.6	27.35	2.1	10.7	10.3	27	27
1934	13.6	41.86	5.7	8.5	28.89	2.5	7.1	26.20	1.9	10.0	9.7	25	25
1935	13.6	41.86	5.7	8.4	28.60	2.4	6.8	25.80	1.8	9.8	9.6	13	13
1936	14.7	42.48	6.2	8.0	28.00	2.2	6.5	25.40	1.7	10.2	10.0	8	8
1937	14.1	42.16	6.0	8.0	28.00	2.2	6.4	25.00	1.6	9.8	9.7	11	11
1938	12.8	41.38	5.3	8.4	28.60	2.4	6.6	25.40	1.7	9.4	9.3	16	16
1939	13.3	41.68	5.5	8.4	28.60	2.4	6.4	25.00	1.6	9.5	9.4	9	9
1940	13.0	41.50	5.4	7.8	27.70	2.2	6.3	24.60	1.5	9.1	9.1	7	7
1941	12.5	41.19	5.1	7.6	27.35	2.1	5.9	23.40	1.4	8.6	8.7	5	5
1942	10.8	39.84	4.3	6.8	25.80	1.8	5.1	21.00	1.1	7.1	7.6	3	3
1943	10.1	39.12	3.9	6.2	24.60	1.5	4.8	20.30	1.0	6.4	7.1	2	2
1944	9.1	37.92	3.4	5.8	23.40	1.4	4.0	17.00	0.7	5.5	6.4	1	1
1945	9.5	38.40	3.6	6.0	24.00	1.4	4.0	17.00	0.7	5.8	6.6	4	4

Notes to Table 17

COLUMN

2, 5, 8 Multiples of average income were derived by dividing the percentage of economic income received (col. 1, 4, and 7) by the percentage of population receiving it. To each multiple a savings-income ratio was assigned, set, on the basis of sample evidence in the report (partly summarized in Table 18), at 17 percent for the multiple of 2, 24 percent for the multiple of 3, 28 percent for the multiple of 4, 30.8 percent for the multiple of 5, 33.2 percent for the multiple of 6, 35 percent for the multiple of 7, 37.8 percent for the multiple of 9, 39 percent for the multiple of 10, and 45 percent for the multiple of 25, and interpolated with an allowance for decreasing increments in the savings-income ratio as the multiple increases.

10 Sum of columns 3, 6, and 9.

11 Sum of products for each year of columns 1, 4, and 7 and a *constant* savings-income ratio. The constant ratio for column 1, 41.859 percent, is the arithmetic mean of column 2 for 1919-45; that for column 4, 27.735 percent, the arithmetic mean of column 5; and that for column 7, 24.037 percent, the arithmetic mean of column 8.

12 & 13 a) To the NBER estimates of individuals' savings for 1919-38 (*National Income and Its Composition, 1919-1938,* Table 39, p. 276) and the Department of Commerce estimates of personal savings for 1929-45 (*Survey of Current Business,* July 1949, Table 3, p. 10) was added the Department of Commerce series on depreciation of owner-occupied dwellings as shown for 1929-41 in National Income Supplement to *Survey of Current Business,* July 1947, Table 39, p. 47, for 1942-45 in *Survey of Current Business,* July 1949, Table 39, p. 25, and extrapolated back to 1919 by an index based on depreciation on all residences (Solomon Fabricant, *Capital Consumption and Adjustment,* NBER, 1938, Table 29, p. 160) and the ratio of imputed rent to all rent paid on urban dwellings as computed from data underlying the NBER series on total imputed rent.

b) The series for 1919-38 and 1929-45 calculated in (a) were divided by aggregate payments to individuals including depreciation on owner-occupied dwellings from sources cited in (a).

c) The percentages for 1919-38 and 1929-45 calculated in (b) were converted to indexes with 1919-38 as base.

d) The index for 1919-38 calculated in (c) was extrapolated through 1945 by the index for 1929-45.

e) Columns 10 and 11, each converted to an index with 1919-38 as base, were divided by the index for 1919-45 calculated in (d), and the ratios ranked in increasing order, to yield columns 12 and 13, respectively.

income, economic income variant, received by the several upper income groups. These shares, when related to the percentage of the population covered, determine for each year the income multiple position (e.g., in 1919, the income multiple position of the top 1 percent was 14.0; of the 2nd and 3rd percentage band, 3.4). From the scattered sample evidence on expenditures and savings, summarized in Table 18, we can estimate the savings-income ratios corresponding to the given income multiple positions—on the assumption that the levels of these ratios, derived primarily from evidence for the 1930's and early 1940's, are held constant for the period covered in Table 17. This evidence, together with the assumption just

stated, is the source of columns 2, 5, and 8. Multiplying the annual entries in columns 1, 4, and 7 by those in columns 2, 5, and 8, we obtain the hypothetical savings of the several upper income groups expressed in percentages of total income of individuals (col. 3, 6, and 9). Adding these estimates, thus expressed, for the three upper income groups, gives the savings of the top 5 percent group (col. 10).

To repeat, column 10 shows the hypothetical savings of the top 5 percent of the population on the assumption that the average proportion of income it saves is determined by its *income multiple position;* and that the savings-income ratio for a given income multiple position is *constant,* at a level suggested by sample studies available since 1929. It is of interest to see what the hypothetical estimate would be on a somewhat different assumption: that the savings-income ratio is constant for a given *percentile* group. This assumption can be easily applied, by using in columns 2, 5, and 8 a *constant* savings-income ratio. Setting the latter at a level equal to the arithmetic mean for the period, multiplying columns 1, 4, and 7 by the constant savings-income ratio for each, and adding the three products, we get the entries in column 11. The latter shows the hypothetical savings of the top 5 percent group, expressed in percentages of total income of individuals, on the assumption that the savings-income ratios for the upper percentage groups are constant over time at levels suggested by the sample studies since 1929.

It will be seen from Table 17 that the hypothetical savings of upper income groups, on the assumption of constancy of the savings-income ratios either at a given income multiple position (col. 10) or for a given percentile group (col. 11), when expressed in percentages of the total income of individuals, vary but little except for the years since 1939. What variation there is is counter-cyclical (observe the rises in 1921 and 1924, the declines in 1920 and 1923, and the almost complete absence of decline during the great depression of 1929-33). The results in columns 10 and 11 would be little affected by any reasonable assumptions concerning the *average levels* of the savings-income ratios of the upper income groups. Unfortunately, there is no reliable series on total savings of individuals with which columns 10 and 11 can be directly compared, at least no series with an average level of the savings-income ratio consistent with the evidence yielded by the samples summarized in Table 18 (and used in

Table 17). But for purposes of rough comparison, we took the crude estimates of total savings of individuals, derived as the difference between aggregate income receipts and consumer expenditures plus taxes; added depreciation on owner-occupied houses; expressed the totals as percentages of all income payments to individuals; converted these percentages to an index with 1919-38 as base; took the ratio of entries in columns 10 and 11 (also converted to indexes with 1919-38 as base) to this index of all individuals' savings as a percentage of their incomes; and ranked the ratios in increasing order.[12]

The entries in columns 12 and 13 indicate a decline after 1939 in the share of total savings accounted for by the top 5 percent group; and, what is more important here, a movement counter to business cycles. The years of depression (1921, 1924, 1932-33, 1938) are marked by high ranks, indicating a high proportion of upper group savings to total savings. In contrast, the years of prosperity (1919-20, 1923, 1929, 1936-37) are marked by low ranks.[13]

The question we propose to explore can now be posed. Is the assumption made in Table 17 at all realistic: that the savings-income ratios for the upper income positions or groups move relatively little during the short periods associated with business cycles? If they are relatively stable in the short run, the share of upper group savings in total savings must vary widely and run counter to business cycles. Only if the savings-income ratios of upper income positions or groups vary with business cycles and much more widely than the savings-income ratios of the lower income positions or groups will this greater variability tend to offset the counter-cyclical movements of their income shares and give them a constant share in total savings of individuals.

The question then reduces itself to one concerning the relative short term variability of savings-income ratios for the upper and lower income groups respectively.

It is the relative variability, not the absolute changes in savings-income ratios that should be compared, as can be seen from the fol-

[12] The use of ranks instead of the actual ratios was due to lack of confidence in the absolute magnitude of the ratios derived—stemming from lack of confidence in the absolute magnitude of the levels of countrywide savings of individuals.

[13] There is some hint that the decline in the proportion of upper income group savings to total savings reaches a trough somewhat before the peak in general business conditions (1919 rather than 1920, 1936 rather than 1937). But the data are too crude to reveal leads or lags.

lowing simple example. If total savings are 15 percent of aggregate income payments, and the top 5 percent group saves a third of its total income of 30 percent, thereby contributing 10 of the over-all 15 percent, the lower 95 percent group must save 5 percent of the aggregate income of individuals out of its total income of 70 percent; i.e., its savings-income ratio is roughly 7 percent. Assume that the savings-income ratios for both the top 5 and the lower 95 percent groups are reduced or increased, absolutely, 3 percent. The savings-income ratios then become either 30 and 4, or 36 and 10 percent, respectively. If they decline and the distribution of income between the two groups remains the same, the over-all savings-income ratio becomes 11.8 percent, instead of 15, of which 9 percent is contributed by the top 5 percent group and 2.8 percent by the lower 95 percent group—a shift in the proportion in total savings in favor of the top group because the *relative* reduction in its savings-income ratio is much less than that of the lower 95 percent group (3 out of 33 percent, or an eleventh, as compared with 3 out of 7 percent, or over four-tenths). If the savings-income ratios rise, the over-all savings-income ratio becomes 17.8 percent, instead of 15, of which 10.8 percent is contributed by the top 5 percent group and 7 percent by the lower 95 percent group—a sharp cut in the relative contribution of the former because the *relative* rise in its savings-income ratio is so much smaller. This example shows, and it can be demonstrated algebraically, that if the short term movements of the savings-income ratios for both upper and lower income groups are in the same direction, equal *absolute* changes will mean that changes in the savings shares of the upper income groups run counter to the absolute changes in the savings-income ratios. Only equal relative changes of savings-income ratios will leave the proportions of upper and lower income group savings in the total of all savings unaffected.

2 *Savings-Income Ratios for Upper and Lower Income Groups*

Table 18 brings together the savings-income ratios revealed in several samples covering intermittently the period from 1929 to 1948. While these samples claim countrywide coverage, they differ significantly in the income concept, number of returns, and adequacy of coverage. For example, the Brookings Institution distribution was based originally upon income including gains and losses from sales of assets, and we had to adjust it to reduce it to the basis of eco-

nomic income. The samples for 1945-48 cover the distribution of money income alone, and no adjustment for their exclusion of income in kind was made.

Table 18

Savings as Percentages of Income, Relative Levels of Income per Consuming or Spending Unit, Various Samples, 1929-1948

	Multiples of Arithmetic Mean Income per Consuming or Spending Unit	Brookings Study *1929* (1)	Consumer Purchases Study *1935-36* (2)	Survey of Spending and Saving in Wartime *1941* (3)	*1942, 1st Qu.* (4)	Survey of Consumer Finances *1945* (5)	*1946* (6)	*1947* (7)	*1948* (8)
1	0.25	—30.4	—32.1	—15.6	—25.1	4.9	—9.3	—14.8	—22.2
2	0.50	—1.3	—7.4	0.2	—0.1	7.9	1.9	1.4	—1.3
3	0.75	8.1	—1.5	5.3	8.3	10.7	7.0	4.6	3.2
4	1.00	11.6	3.5	5.0	10.9	12.9	10.8	7.0	6.4
5	1.50	16.3	9.4	10.7	15.9	15.7	15.9	10.2	10.8
6	2.00	19.5	14.1	13.9	18.2	19.6	19.7	14.0	14.0
7	3.00	23.6	21.9	19.3	22.7	28.6	24.9	21.5	18.5
8	4.00	29.0	27.2	24.8	27.2				
9	7.00	37.0	37.5						
10	10.00	38.5	39.8						
11	25.00	43.1	49.2						
	Arithmetic Means of Above for Wider Groups								
	LINES								
12	2-4 (av. multiple 0.75)	6.1	—1.8	3.5	6.4	10.5	6.6	4.3	2.8
13	6-7 (av. multiple 2.50)	21.6	18.0	16.6	20.4	24.1	22.3	17.8	16.2
14	6-8 (av. multiple 3.00)	24.0	21.1	19.3	22.7				
15	8-10 (av. multiple 7.00)	34.8	34.8						

One general adjustment was introduced to improve the comparability of the samples. First, the arithmetic mean income of each total sample population was adjusted to equal the per consuming unit income of a continuous series of individuals' aggregate incomes, in this case the Department of Commerce series. Then each sample income subgroup was described by its ratio to the arithmetic mean income per consuming unit for the total population. Consequently, the savings-income ratios for the several income classes in each sample distribution were associated with their average incomes expressed as ratios of the countrywide per consuming unit income derived from Department of Commerce estimates. The savings-income ratios were then established for standard multiples by simple interpolation.

Four conclusions are obvious. First, the savings-income ratios are significantly higher at the upper income multiples than at the lower. This carries with it a no less obvious but often overlooked implication that savings are less equally distributed than income. If the savings-income ratios were the same at different levels of per unit income, the relative spread in the distribution of savings and of income would be identical. But if they are higher at higher levels of per unit income, the shares of upper income groups in total savings must be considerably larger than their shares in total income. The order of magnitude is readily calculated. As the top 5 percent group received, on the average, about 30 percent of total income (economic income variant), its income multiple position was 6. At this income multiple position, the savings-income ratio is about a third. Hence, savings by the top 5 percent group would be about 10 percent of total individuals' income. If savings by all individuals are about 15 percent of total income, the maximum average level that we can reasonably assume from evidence of the samples, the proportion accounted for by the top 5 percent group would be two-thirds. In other words, the share of the top 5 percent group in total savings would be over twice as large as its share in aggregate income, three-tenths.

Second, the rise in the savings-income ratios with the rise in income is larger in the lower than in the higher ranges of the income multiples. From the income multiple of 0.5 to that of 1.0 (doubling), the savings-income ratio rises from close to or well below zero (barring 1945, an exceptional year still marked by war restrictions) to well above zero and in most years to over 5 percent. From the income multiple of 2.0 to that of 4.0 the savings-income ratio fails to double, and above the income multiple of 4.0, its rise is quite gentle. The slope of the line connecting savings-income ratios with relative income position declines as we ascend the income scale.

Third, the spread in the savings-income ratios is somewhat wider when we classify income groups by their standing relative to average *per capita* income than by their standing relative to per consuming or spending unit income.[14] This is in line with the usual greater

[14] This statement is based on the results of more detailed calculations. Since the results are close to those in Table 18, it did not seem necessary to summarize them here. They reenforce the conclusions with respect to differences in the levels of savings-income ratios for upper and lower income groups respectively, the damping

sensitivity of a distribution based on per capita income in reflecting income as a determinant of expenditures and savings than of a distribution based on total income per consuming or spending unit where large families with large total but low per capita income may be classified at upper income levels.

The fourth and most relevant conclusion is the greater stability over time of the savings-income ratios at the upper income levels than at the lower. At the multiple of 0.50 (omitting the 0.25 multiple as too low for yielding reliable savings-income ratios), the range is from 1.9 to —7.4 percent (again disregarding 1945 as an exceptional year); at the multiple of 1.0, from 3.5 to 11.6 percent, already narrower; at the multiple of 1.5, from 9.4 to 16.3 percent, still narrower; at the multiple of 2.0, from 13.9 to 19.7 percent, still narrower; at the multiple of 3.0, from 18.5 to 24.9 percent, slightly wider absolutely but narrower relatively; and so on, with increasing narrowing of even the absolute, let alone the relative ranges, as we pass to the higher income multiples. This narrowing of absolute changes in savings-income ratios as we ascend the income scale is even more evident for the wider groups in lines 12-15. And while Table 18 does not include years of marked cyclical trough, it does cover years with quite a range in the over-all savings-income ratio—from about 7 percent in 1948 to about 17 percent in 1929. Furthermore, according to additional information from a special Brookings Institution sample of questionnaire returns for 1928-32, the absolute and certainly the relative range of changes over time in the savings-income ratio are much narrower at the upper than at the lower income levels. What lends the conclusion more significance is that this diminution in the range seems systematic and gradual as we rise from the lowest to the highest income multiples; and that changes revealed by different samples and sample years in the over-all savings-income ratios reflect business cycles and are not random.

This conclusion is necessarily tentative in view of the small body of data upon which it is based and is subject to one exception. If gains or losses on sales of assets are very large at the upper income levels, and are treated by recipients as bona fide income to be spent currently, the savings-income ratios of upper income groups would be reduced during cyclical expansions and raised during contrac-

of the slope of the rise in the ratios at upper income levels, and the narrower range of changes in these ratios for the upper income groups.

tions, thereby introducing a variability not recorded in the savings-income ratios in terms of *economic* income in Table 18. But even this exception, which would make for a counter-cyclical movement of savings-income ratios for upper income groups, would merely strengthen the final conclusion, that the shares of upper income groups in total savings decline during expansions and rise during contractions.

The factors that make for stability, or narrow short term changes, in the savings-income ratios at upper income levels can be summarized only briefly here. First, it can be demonstrated by simple algebra that with a given change in income and constant expenditures, the resulting change in savings-income ratios would be absolutely, and of course relatively, smaller for an income group whose savings-income ratio is high than for one whose ratio is low. Second, the savings-income ratio for lower income units may vary more during short term cycles because they cannot curtail consumption proportionately to income during bad times, and having contracted debts or reduced their assets materially, are impelled to build them up again during good times. The resulting relative stability of consumption (keeping it in bad times above the relative cut in income and in good times below the relative rise in income) makes for a wide cyclical swing in the savings-income ratio. The upper income units need not hold so rigidly to their consumption patterns, since they can ordinarily dispense with a large proportion of goods. Third, even if not directly affected by realized gains and losses on sales of assets, the upper income units, as large property holders, are affected by fluctuations in asset values; and may increase or reduce their consumption with short term fluctuations of the business cycle, thus contributing to a relatively constant savings-income ratio. Fourth, since we deal here with units classified by current year income, shifts into and out of income groups should be considered. These shifts, which in general increase the short term variability of the savings-income ratio, affect most heavily the groups at the two extremes of the income distribution. But the effect at the upper extreme is mitigated by the fact that beyond a certain income multiple range, the savings-income ratio does not rise or rises very slowly; and migration within this range would not have much effect on the savings-income ratio. The effect of migration on the variabil-

ity of the savings-income ratio at the lower end of the income distribution may be larger because of the steep slope of the line connecting the savings-income ratio with relative income size, i.e., with the income multiple.

3 *Implications*

The evidence in Table 18 and the arguments just adduced corroborate the assumption that savings-income ratios at upper income *multiples* vary less during business cycles than those at lower income positions. In so far as upper income *groups* can be characterized by their average income levels, they are at high income multiples; hence *if* their relative income position were constant during business cycles, their savings-income ratios would vary with a much narrower relative amplitude than would the savings-income ratios of the lower income groups. Furthermore, the income multiple position of upper income groups is not constant but on the whole (with qualification for the irregular behavior of the share of the top 1 percent) changes counter to business cycles. The movements in the savings-income ratios of the upper income groups are then a product of two sets of opposite changes: (a) the counter-cyclical changes of their income shares (multiple positions); (b) the changes in the savings-income ratios at given upper income multiples, which move with business cycles. We cannot tell with any assurance what the net balance of these opposite movements is in setting the cyclical pattern of changes in savings-income ratios of upper income groups: in most violent cyclical shifts, the positive conformity of savings-income ratios for a given multiple position probably outweighs the counter-cyclical pattern of shifts in income shares, i.e., in income multiple positions, thereby making savings-income ratios for upper income groups move with business cycles.

But even so, our analysis clearly suggests that the savings of the upper income groups will vary less during business cycles than those of lower income groups (both expressed as percentages of the aggregate income of individuals). The reasons are two: (a) the inverted movement of the shares of upper groups in total income tends to offset the positive movement of the savings-income ratio for given income multiples, whereas for the lower income groups both the share of aggregate income received and the savings-income ratio move with business cycles; (b) the savings-income ratio varies less

for upper income multiples than for lower, and the difference in the *relative* variation must be quite large.

As far as the savings of upper income groups, expressed as percentages of the total income of individuals, are stable or vary little whereas those of lower income groups vary markedly with business cycles, two further conclusions follow. First, the marked fluctuation in the over-all savings-income ratio for individuals in positive conformity to business cycles must be due largely to variations in the savings-income ratios for the lower income groups; it can be due only in small part to variations in either the income shares or the savings-income ratios of upper income groups. Second, the proportions of total savings by individuals accounted for by upper and lower income groups respectively must change significantly during business cycles: as total savings and their ratio to the aggregate income of all individuals rise during expansions, the share of savings contributed by upper income groups must decline; as total savings of individuals and their ratio to total income decline during contractions, the share contributed by upper income groups must rise.

These conclusions are subject to several qualifications. Our sample data were scanty, particularly in their coverage of the top income group and of cyclical contractions; they had to be adjusted, necessarily crudely, in different ways to fit the income concepts used here. Furthermore, the period covered by our analysis is quite short, yielding surmises rather than firm generalizations. Yet one aspect of the conclusions must be emphasized. If the average level of the savings-income ratio for upper income groups (say top 5 or 10 percent) is 25 or 30 percent, and that for lower income groups is 5 percent or less, the *relative* variability of the savings-income ratio for the former can hardly be as wide as for the latter. Consequently, the greater relative variability of savings-income ratios for the lower income groups is so highly probable as to be almost in the nature of an algebraic necessity; and the inference concerning the counter-cyclical movement of upper group shares in total savings necessarily follows.

By way of final illustration we present Table 19, which in a sense restates data used in Table 18; but it brings out more distinctly the connection between changes in the over-all savings-income ratio and in the proportion of total savings accounted for by the upper income groups. For the two samples that cover more than one year and for

which changes can therefore be studied without any adjustment for comparability, we assembled measures of the over-all savings-income ratio and of shares of the upper tenth and lower nine-tenths in savings and income. These were taken from the sample distributions, and the groups are classified by income per consuming or spending unit.

Table 19

Shares of Savings Accounted for by Top Income Group in Periods of Change in the Over-all Savings-Income Ratio Two Samples (percentages)

	Sample	Over-all Savings-Income Ratio (Sample Population) (1)	Top Tenth: Share of savings (2)	Top Tenth: Share of income (3)	Top Tenth: Savings-income ratio (4)	Lower Nine-Tenths: Share of savings (5)	Lower Nine-Tenths: Share of income (6)	Lower Nine-Tenths: Savings-income ratio (7)
	SURVEY OF SPENDING AND SAVING IN WARTIME							
	Farm							
1	1941	13.8	56.0	23.4	33.1	44.0	76.6	8.0
2	1942, 1st Qu.	—10.2	*	33.7	47.3	*	66.3	—39.3
	Rural Nonfarm							
3	1941	5.8	68.6	23.2	17.1	31.4	76.8	2.4
4	1942, 1st Qu.	11.2	47.9	24.0	22.4	52.1	76.0	7.7
	Urban							
5	1941	9.0	78.4	31.6	22.4	21.6	68.4	2.9
6	1942, 1st Qu.	13.9	68.3	31.5	30.1	31.7	68.5	6.4
	SURVEY OF CONSUMER FINANCES							
7	1945	15	46	29	23.8	54	71	11.4
8	1946	12	63	32	23.6	37	68	6.5
9	1947	9	77	33	21.0	23	67	3.1
10	1948	7	80	32	17.5	20	68	2.1

* Not shown because of difference in signs: for column 2 there are positive savings 156.9 percent as large as the negative total; for column 5 there are negative savings 256.9 percent as large as the negative total.

Whenever the over-all savings-income ratio rises from one year to the next, the proportion of total savings of individuals accounted for by savings of the upper income groups declines; and whenever it declines, the proportion rises. The consistent negative association is due to: (a) a negative association between changes in the income share of the upper income groups and changes in the over-all savings-income ratio; (b) a consistently narrower relative, and often absolute, change in the savings-income ratio of the upper income groups than in that of the lower groups.

The significance of Table 19 is limited by the small size of the samples and particularly by the presence of war years in the period

covered. Nevertheless, it strengthens the basic conclusion of the analysis of income and savings of upper income groups: short term variations in the proportions they contribute to total savings of individuals are large and run counter to variations in the over-all savings-income ratio, hence counter to business cycles.

Further implications of this conclusion are beyond the scope of this discussion. However, they seem, at least at first glance, to be far-reaching. The savings of upper and of lower income groups tend to flow into different kinds of investment: upper income groups are the chief recipients of dividends which in turn constitute a large share of their property incomes. Of the property incomes of lower income groups, on the contrary, dividends constitute a small share. Similar evidence concerning differences in the composition of assets held by upper and lower income groups is provided in the 1949 Survey of Consumer Finances (see *Federal Reserve Bulletin,* Aug. and Sept. 1949). Cyclical shifts in the proportion of total savings accounted for by upper income groups may mean shifts in the proportion of individuals' savings available for different types of investment, and an analysis of the relation between the new supply of savings and of investment opportunities during business cycles must consider cyclical shifts in savings coming from the upper and from the lower income groups.

There are similar consequences in the distribution of consumer expenditures between those by upper and by lower income groups. The counter-cyclical movement of income shares and the more stable savings-income ratios for upper than for lower income groups mean that in expansions a decreasing share of income is offset by only a moderate rise in the savings-income ratio, whereas for the lower income groups an increasing share of income may be offset by a sharp rise in the savings-income ratio. The shares of upper income groups in consumption expenditures may rise during expansions, or at least through a substantial part of them, and decline during contractions. However, their average share in expenditures is much smaller than their average share in savings; hence the shifts in the distribution of the former are likely to be much less marked than those in the distribution of total savings by individuals.